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Arrhythmias

SUBCLINICAL THYROID DISEASE AND RISK OF NEW-ONSET ATRIAL FIBRILLATION

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Session Title: Arrhythmias: AF/SVT- Emerging Risk Factors for Atrial Fibrillation
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Background: It is still uncertain if subclinical thyroid disease or "high-normal" thyroid function are risk-factors for atrial fibrillation (AF).

Objective: To examine the risk of AF in relation to thyroid function.

Methods: Patients consulting their general practitioner from 2000-2009 in Copenhagen, Denmark, who underwent thyroid blood tests, were identified by individual-level linkage of nationwide registries. Patients with a history of thyroid disease, AF or related medication were excluded. Risk of AF was analyzed using cumulative incidence plots and Poisson regression models to get Incidence Rate Ratios (IRR).

Results: Of 525,100 individuals in the study population (mean age 51.7 years [SD ±18.0]; 39.5% males) 504,113 (96.0%) were euthyroid, 1,474 (0.3%) had clinical hypothyroidism, 10,679 (2.0%) subclinical hypothyroidism, 3,421 (0.7%) clinical hyperthyroidism and 5,414 (1.0%) subclinical hyperthyroidism. A "dose-dependent" increased risk of AF was found in two levels of subclinical hyperthyroidism (TSH <0.1, 0.1-0.2 mU/L): IRR 1.8 [95% CI: 1.5-2.2], IRR 1.5 [1.2-2.0] and in "high-normal" levels of euthyroidism (TSH 0.2-0.4 mU/L): IRR 1,3 [1.2-1.5]. Both clinical and subclinical hypothyroidism was associated with a lower risk of AF.

Conclusions: Subclinical hyperthyroidism and "high-normal" thyroid function is a significant risk-factor for AF, whereas hypothyroidism is associated with decreased risk of AF.